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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/897,573

07/02/2001

Richard J. Markle

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06/29/2005

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EXAMINER

SMITH, ZANDRA V

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/897,573	Applicant(s) MARKLE ET AL.	
	Examiner Zandra V. Smith	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,4,6,11-18,21,23 and 32-40 is/are allowed.
- 6) ☒ Claim(s) 1,7-10,19,24-27,29-31,41-45 and 47 is/are rejected.
- 7) ☒ Claim(s) 3,5,20,22,28 and 46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7, 9, 10, 27, 29-30, and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by *Kawahara et al. (5,608,816)*.

As to **claims 1 and 45**, Kawahara discloses an apparatus for inspecting wiring patterns, comprising:

providing a wafer (13) having a test structure comprising a wiring pattern (col. 12, lines 20-25), illuminating a portion of the grid with a light source, measuring light reflected from the illuminated portion of the grid to generate a reflection profile and determining dimension of the grid (col. 12, lines 42-50 and col. 18, lines 64-68). Kawahara fails to specifically provide details of the pattern however this is an inherent feature of a wiring pattern.

As to **claims 7 and 29**, Kawahara discloses everything claimed, as applied above, in addition a reflection profile is developed based on intensity of the reflected light (col. 13, lines 10-35).

As to **claim 9**, Kawahara discloses everything claimed, as applied above, in addition a fault condition is determined (col. 4, lines 5-20).

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As to **claim 10**, Kawahara discloses everything claimed, as applied above, in addition a width dimension is determined (col. 12, lines 35-41).

As to **claims 27 and 30**, Kawahara discloses an apparatus for inspecting wiring patterns, comprising:

a light source (18), a detector (20) for measuring reflected light (reflectometer) and a processor (12, see fig. 1).

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 42 is rejected under 35 U.S.C. 102(e) as being anticipated by *Ishizuka et al. (US 6,594,598 B1)*.

As to **claim 42**, Ishizuka discloses a method for controlling production line that includes a grid of intersecting line forming openings (see fig. 3a).

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 19, 24-26, 31, 41, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kawahara (5,608,816)*.

As to **claims 8, 31, and 47**, Kawahara discloses everything claimed, as applied above, in addition a comparison is made to determine the profile (col. 1, lines 42-48). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a comparison to ensure proper sizing for proper component placing.

As to **claims 19 and 41**, Kawahara discloses an apparatus for inspecting wiring patterns, comprising:

providing a wafer (13) having a test structure comprising a wiring pattern (col. 12, lines 20-25), illuminating a portion of the grid with a light source, measuring light reflected from the illuminated portion of the grid to generate a reflection profile and determining dimension of the grid (col. 12, lines 42-50 and col. 18, lines 64-68). Kawahara fails to specifically provide details of the pattern however this is an inherent feature of a wiring pattern. Additionally, Kawahara discloses a comparison is made to determine the profile (col. 1, lines 42-48). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a comparison to ensure proper sizing for proper component placing.

As to **claim 24**, Kawahara discloses everything claimed, as applied above, in addition a reflection profile is developed based on intensity of the reflected light (col. 13, lines 10-35).

As to **claim 25**, Kawahara discloses everything claimed, as applied above, in addition a fault condition is determined (col. 4, lines 5-20).

As to **claim 26**, Kawahara discloses everything claimed, as applied above, in addition a width dimension is determined (col. 12, lines 35-41).

Claims 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ishizuka et al. (US 6,594,598 B1)* in view of *Kawahara (5,608,816)*.

As to **claims 43-44**, Ishizuka discloses everything claimed, as applied above, with the exception of the pattern between layers, however to do so is well known as taught by Kawahara. The wiring pattern of Kawahara is disclosed between layers (col. 12, lines 52-60). It would have been obvious to one having ordinary skill in the art at the time of invention to include the wiring pattern between layers to provide for electrical connection of the layers.

Allowable Subject Matter

Claims 2, 4, 6, 11-18, 21, 23, 32-40 are allowable over the prior art record.

Claims 3, 5, 20, 22, 28, and 46, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious selecting a reference profile closest to the generated reflection profile, determining at least one operating

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recipe of the etch tool, determining an operating recipe of the photolithography tool, in combination with the rest of the limitations of the claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

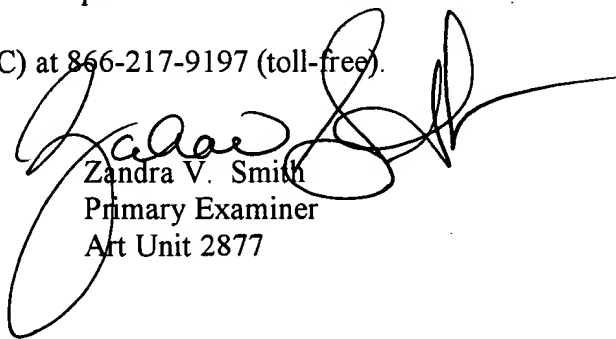
Ninomiya et al. (5,459,794).

Fax/Telephone Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (571) 272-2429. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Zandra V. Smith
Primary Examiner
Art Unit 2877

June 24, 2005